

COMPARISON WITH OTHER SOURCES

How do the racial and ethnic residential segregation indexes in this report compare with those of others? The residential segregation estimates in this report were calculated by examining the distribution of the population across census tracts within Metropolitan Areas (MAs) and Primary Metropolitan Statistical Areas (PMSAs), as defined by the Office of Management and Budget on June 30, 1999, and used in Census 2000. Minor Civil Division-based MAs and PMSAs were used in New England. Indexes for different minority groups were calculated using non-Hispanic Whites as the reference group. Since segregation indexes for metropolitan areas with small minority populations are less reliable than those with larger ones, we have also focused on MAs where the minority population comprises at least 3 percent of the MA population or numbers over 20,000.

We evaluated our estimates using two strategies. First, we compared our estimates with those generated by three different institutes: the Ralph and Goldy Lewis Center at the University of California in Los Angeles (UCLA), the Center on Urban and Metropolitan Policy at the Brookings Institution, and the Lewis Mumford Center at State University of New York (SUNY)-Albany. Second, because these research centers only calculate one or two different measures of residential segregation, we compared our other segregation measures to those generated by

Massey and Denton (1988) using 1980 Census data.

The Ralph and Goldy Lewis Center at UCLA focuses mainly on the dissimilarity index, calculating it by using census tract information and Census 2000 boundaries for MAs for Blacks or African Americans, Latinos, and Asians and Pacific Islanders. The Lewis Center also analyzes only MAs where the minority population of the group in question numbers over 20,000 or constitutes 3 percent of more of the total population. In addition, the reference group is non-Hispanic Whites and the overall mean dissimilarity score is weighted by the size of the racial/ethnic group population in the MA.

The Brookings Institution uses two basic measures of African American residential segregation in 1980, 1990, and 2000: the dissimilarity and isolation indexes. Census tracts are again used to proxy for neighborhoods, and indexes are calculated at the MA level. Brookings only calculates indexes for MAs with at least 1,000 African American residents in 1990. The 2000 segregation indexes presented by Brookings does not take into account the recent change in the Census 2000 that allowed respondents to identify themselves with multiple race categories. The report defines African Americans as those who checked that category only. The non-Black population serves as the reference group.

The Mumford Center at SUNY-Albany also uses two measures of segregation: dissimilarity and isolation. They calculate both indexes using census tract data and the Census 2000 boundaries for MAs. Federal Information Processing Standards (FIPS) place codes are used to determine which tracts should be located in each MA, whereas we use the state and county code to determine the allocation of tracts in MAs. Using FIPS place codes makes places with populations of less than 10,000 unidentifiable, in which case the Mumford Center assigns those tracts to their original 1990 MA/PMSA location. The 2000 segregation indexes presented by the Mumford Center also take into account the recent change in the Census 2000 that allows respondents to identify themselves with multiple races categories. The Mumford Center's racial and ethnic categories are coded slightly different than in this report. Aside from those in the reference group — non-Hispanic Whites — we allow individuals to fall into more than one racial or ethnic minority category. Hispanics and non-Hispanic Whites are coded similarly by the Mumford Center and this report, but their Black category contains all non-Hispanics who self-identified as Black alone or in combination with another race group, and Asians consist of those who marked Asian but not Black. The Mumford Center alternatively uses Whites, Blacks, Hispanics, and Asians as reference groups in some

of their calculations. In Tables C-1 and C-2, we compare our segregation estimates to those from the Mumford Center where Whites serve as their reference group.

Given the striking similarity in methodologies between the Lewis Center and those used in this report, it should be no surprise then that the Lewis Center's dissimilarity index estimates are virtually the same as ours. Additionally, the Mumford Center dissimilarity scores are not that different from ours. Comparing our figures for all 331 MAs for 1990 and 2000 and 330 for 1980 to the Mumford Center's figures reveals prominent similarities. The Mumford Center's analysis uses the same number of MAs as we do

in 1990 and 2000, but includes only 325 MAs in 1980. The unweighted dissimilarity scores have slight differences, with Blacks and Hispanics having the largest differences. Brookings, which calculates indexes for MAs with at least 1,000 African Americans in 1990, are compared against our numbers for all MAs for better comparability. The Brookings' weighted and unweighted dissimilarity index scores for Blacks in 1990 and 2000 are very close to numbers in this report, with ours always higher. The Brookings figure for Black dissimilarity in 1980 is similar to ours, but with a slightly higher difference.

Another index used to measure segregation by two of the three

institutes is the isolation index. Brookings' isolation index scores are notably different from our scores. These differences are not trivial, with our numbers consistently higher than Brookings. At least part of the reason for this is the fact that Brookings uses the non-Black population as the reference group, while this report calculates isolation in a two-group context — where only non-Hispanic Whites and the minority group in question are considered in the metropolitan area population. Supporting this explanation, the difference in the scores is larger in 2000 (when the U.S. population was more diverse) than in 1990. The same observation can be seen with the Mumford Center weighted

Table C-1.
Comparison of Dissimilarity Scores in This Report With Those From Other Sources

Source	1980			1990						2000					
	Weighted			Weighted			Unweighted			Weighted			Unweighted		
	Blacks	Hispanics	Asians and Pacific Islanders	Blacks	Hispanics	Asians and Pacific Islanders	Blacks	Hispanics	Asians and Pacific Islanders	Blacks	Hispanics	Asians and Pacific Islanders	Blacks	Hispanics	Asians and Pacific Islanders
This report—selected MAs	0.729	0.509	0.422	0.681	0.505	0.424	0.587	0.408	0.393	0.643	0.515	0.433	0.550	0.432	0.397
This report—all MAs	0.727	0.502	0.405	0.678	0.500	0.412	0.541	0.343	0.366	0.640	0.509	0.411	0.500	0.374	0.338
Brookings Institution	0.700	(NA)	(NA)	0.659	(NA)	(NA)	0.559	(NA)	(NA)	0.620	(NA)	(NA)	0.495	(NA)	(NA)
Mumford Center 10/31/01 ¹	0.738	0.507	0.412	0.688	0.506	0.420	0.557	0.361	0.384	0.650	0.515	0.421	0.514	0.386	0.355
Lewis Center 7/19/01	(NA)	(NA)	(NA)	0.674	0.484	0.409	(NA)	(NA)	(NA)	0.646	0.513	0.420	(NA)	(NA)	(NA)

NA Not available.

¹Unweighted dissimilarity scores were calculated by using metropolitan area data obtained through the Mumford Center website.

Note: Selected MAs are those with 3 percent or 20,000 or more of minority group in 1990. See text for methodological differences across studies.

Source: U.S. Census Bureau, Census 1980, 1990, and 2000 Summary File 1 and studies listed.

and unweighted isolation scores. Comparing our figures for all MAs to the Mumford Center's weighted and unweighted isolation scores reveals moderate to high differences, with our scores primarily higher than those of the Mumford Center's. The differences observed in 1990 are not as great as those in 2000, with Asians having the highest differences for the unweighted scores and Hispanics for the weighted scores. Again, the method that the Mumford Center employs for calculating the isolation index is not the same as in this report. Our isolation index numbers are once again higher, in general, probably because only the minority and reference group population (non-Hispanic Whites) are considered in the calculation, while the Mumford

Center calculates isolation vis-a-vis the total population.

After comparing our numbers with those of the Brookings Institution, the SUNY-Albany Lewis Mumford Center, and the UCLA Ralph and Goldy Lewis Center, we feel confident that the numbers presented in this report are valid. Our dissimilarity index scores for 1990 and 2000 were very close to those posted by all three research centers, though isolation index scores differed somewhat, but for an understandable reason. These differences are in large part due to the fact that the various Institutes used different methods. The numbers in this report are, unsurprisingly, closest to those who used the most similar methods.

While the above analysis compared segregation scores from Census 2000, it focused only on the two segregation measures calculated by the three research centers. However, in a detailed review of segregation measures, Massey and Denton (1988) described five general dimensions of segregation, each of which have several potential measures (See Appendix B). Following this lead, we calculated 19 of their 20 measures of segregation. So, to evaluate the 17 measures not mentioned above plus the isolation index, we compared our estimates to Massey and Denton's. Massey and Denton calculated their indexes using 1980 census data on the 50 largest Standard Metropolitan Statistical Areas (the forerunner of

Table C-2.
Comparison of Isolation Scores in This Report With Those From Other Sources

Source	1980			1990						2000					
	Weighted			Weighted			Unweighted			Weighted			Unweighted		
	Blacks	Hispanics	Asians and Pacific Islanders	Blacks	Hispanics	Asians and Pacific Islanders	Blacks	Hispanics	Asians and Pacific Islanders	Blacks	Hispanics	Asians and Pacific Islanders	Blacks	Hispanics	Asians and Pacific Islanders
This report—selected MAs	0.661	0.468	0.292	0.622	0.521	0.330	0.441	0.282	0.213	0.599	0.572	0.395	0.428	0.354	0.285
This report—all MAs	0.655	0.454	0.233	0.614	0.508	0.264	0.327	0.140	0.059	0.591	0.552	0.306	0.320	0.207	0.081
Brookings Institution.	0.548	(NA)	(NA)	0.467	(NA)	(NA)	0.255	(NA)	(NA)	0.391	(NA)	(NA)	0.205	(NA)	(NA)
Mumford Center 10/31/01 ¹	0.618	0.384	0.184	0.559	0.424	0.191	0.300	0.128	0.447	0.514	0.455	0.210	0.277	0.167	0.557

NA Not available.

¹Weighted and unweighted isolation scores were calculated by using metropolitan area data obtained through the Mumford Center Web site. Tabulations weighted by the number of members in the minority group in question in each metropolitan area.

Note: Selected MAs are those with 3 percent or 20,000 or more of minority group in 1990. See text for methodological differences across studies.

Source: U.S. Census Bureau, Census 1980, 1990, and 2000 Summary File 1 and studies listed.

MA), plus 10 others with sizeable concentrations of Hispanics. Their study defines neighborhoods in terms of census tracts. For an approximate comparison, we selected the 58 largest MAs in 1980, whose total population was greater than 810,000.

When one compares Massey and Denton's estimates to our 1980 segregation calculations, the values are quite similar (see Table C-3). Differences between the calculations were generally below 0.05. Because we used the same method to calculate the isolation index, these scores differed only slightly. The indexes that exhibited high differences in unweighted averages were the relative clustering index, the relative concentration index, the

relative centralization index, and Atkinson with its shape parameter, b , equal to 0.1. Each had differences above 0.05 but below 0.065, with the exception of the relative clustering index, which had a high difference of 0.238. This index, though, has a greater range (from -0.729 to 10.086 according to Massey and Denton calculations) and standard deviation than any other measure. Our median values tended to be lower than Massey and Denton's, with the relative clustering index, the relative concentration index, and Atkinson ($b=0.1$) again exhibiting the greatest differences. Our minimum values also tended to be smaller than Massey and Denton's while our maximum values were not that different from Massey and Denton's. Overall, our

1980 calculations were not that different from Massey and Denton's calculations. Differences can likely be attributed, at least in part, to the difference in the method in which these MAs were chosen.

In sum, the indexes presented in this report are robust, but the reader is warned that differences in approach, whether in geographic unit of analysis, the reference group, the treatment of multirace individuals, or the inclusion/exclusion or weighting of metropolitan areas, can have an effect on the indexes. It is, however, our conclusion that the comparisons over time and among groups would likely be consistently found across studies that use slightly different approaches.

Table C-3.
Medians and Unweighted Means for Segregation Indexes by Source

Index	Census Bureau calculations for 58 MAs, 1980					Massey and Denton calculations for 60 MAs, 1980				
	Median	Un-weighted Mean	Un-weighted Standard Deviation	Minimum	Maximum	Median	Un-weighted Mean	Un-weighted Standard Deviation	Minimum	Maximum
Dissimilarity	0.457	0.500	0.184	0.191	0.878	0.465	0.510	0.169	0.215	0.906
Gini.....	0.609	0.636	0.191	0.276	0.971	0.620	0.654	0.171	0.318	0.974
Entropy.....	0.187	0.262	0.207	0.031	0.781	0.198	0.267	0.196	0.042	0.780
Atkinson with $b=.1$	0.076	0.110	0.087	0.013	0.436	0.148	0.170	0.114	0.024	0.553
Atkinson with $b=.5$	0.315	0.397	0.235	0.069	0.908	0.358	0.427	0.214	0.097	0.922
Atkinson with $b=.9$	0.514	0.574	0.263	0.129	0.988	0.551	0.599	0.237	0.171	0.994
Interaction.....	0.827	0.724	0.263	0.145	0.991	0.805	0.713	0.261	0.147	0.989
Isolation	0.173	0.276	0.263	0.009	0.855	0.195	0.287	0.261	0.011	0.853
Correlation ratio.....	0.122	0.231	0.237	0.003	0.813	0.126	0.232	0.230	0.006	0.811
Delta	0.792	0.781	0.096	0.437	0.935	0.781	0.774	0.097	0.416	0.937
Absolute concentration.....	0.951	0.933	0.059	0.609	0.990	0.936	0.901	0.098	0.468	0.990
Relative concentration.....	0.554	0.522	0.269	-0.582	0.965	0.469	0.458	0.291	-0.483	0.945
Absolute centralization ...	0.765	0.724	0.156	0.264	0.948	0.778	0.744	0.154	0.128	0.969
Relative centralization.....	0.216	0.238	0.195	-0.222	0.696	0.265	0.291	0.202	-0.142	0.742
Absolute clustering.....	0.051	0.145	0.180	-0.003	0.667	0.060	0.137	0.168	0.006	0.668
Spatial proximity	1.057	1.148	0.192	1.001	1.818	1.053	1.133	0.182	1.000	1.844
Relative clustering.....	0.875	1.436	1.598	-0.351	9.983	0.518	1.198	1.742	-0.729	10.086
Distance decay interaction...	0.891	0.802	0.206	0.304	0.994	0.886	0.790	0.214	0.216	0.993
Distance decay isolation...	0.103	0.195	0.207	0.005	0.696	0.114	0.210	0.214	0.007	0.739

Note: Indexes in bold are those highlighted in this report.

Source: U.S. Census Bureau figures from Census Summary File 1 for 1980. Others are from Massey and Denton, 1988.